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Case Report

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Psychogenic pruritis as a cause of prurigo nodularis

Cima Hamieh[1], Mahmoud El-Hussein[2], Eric Revue[2]

[1]Department of Geriatrics, Intercommunal Le Raincy Montfermeil Groupe Hospital, Montfermeil, France
[2]Department of Emergency Medicine, APHP–Lariboisiere Hospital, Paris, France

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Corresponding Author: Mahmoud El Hussein. mahmoud.el-hussein@hotmail.com

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ABSTRACT

Prurigo Nodularis is a skin disease, secondary to a chronic scratching behavior. As multiple etiologies were said to be the cause of this condition, no clear pathophysiology has been described, and treatment is still not readily available. An elderly patient presented to the Emergency Department for confusion was found to have multiple excoriating lesions on the abdomen, back and extremities. Multiple treatment regimens were tried to manage this skin disease prior to this admission, with no improvements. This patient was eventually diagnosed with Prurigo Nodularis and treatment was initiated. In this case report we discussed the etiologies, presentation and management of Prurigo Nodularis, while focusing on the case in hand .

Keywords: Dermatology, prurigo nodularis, psychogenic pruritis

INTRODUCTION

Prurigo Nodularis (PN) is a chronic skin disease, inflammatory in nature,secondary to a chronic scratching behavior, for which no clear pathophysiology has yet been identified.[1] The skin rash that characterizes PN consists mainly of excoriating hyperkeratotic, itchy nodules, or plaques. The distribution is usually asymmetric bilaterally dispersed on the trunk, abdomen and all extremities. If there is back involvement, the butterfly sign can be a useful clinical tool for diagnosis.[2] The diagnosis of PN is therefore a clinical one and its assessment is subjective.

Physicians can rely on 2 tools to assess the intensity of the pruritus: The Visual Analog Scale (VAS), 10-cm line with 0 cm indicating no pruritus and 10 cm being the worst.The patient can cross the line at the point that they feel corresponds to the intensity of their symptom. The Numerical Rating Scale (NRS) is a scale which gradesthe intensity of the pruritis, from 0 to 10, according to the patient. These two scales are helpful in categorizing pruritis by severity,mild/low, moderate, severe and very severe pruritis.[3] Once diagnosed, some underlying disorders need to be ruled out. The etiologies of the disease are unknown, however some studiesmade certain associations with it. Literature associated PN with hypertension, ischemic diseases, Alzheimer's Disease, chronic kidney disease, chronic hepatitis C, chronic obstructive pulmonary disease (COPD), congestive heart failure(CHF) and depression;[4] PN is also linked to liver disorders, malignancies, mainly lymphomas, thyroid illnessesand human immunodeficiency virus (HIV),hence the need for an extensive workout prior to initiating any treatment.[3] PN was also associated with age, average age of diagnosis being between 51 and 65. The aging process is associated with pathologic and immunologic changes, where the epidermis, per se, deteriorates with age, which predisposes the elderly to the itch.[5]

When all systemic, metabolic and infectious causes are ruled out, physicians should consider other underlying conditions for PN, such as psychogenic itch. In fact, literature associated depression with itch; also, delusion of parasitosis is on the differential diagnosis.[6]

PN is poorly studied; some researchers have in fact identified it as being a dermatosis that decreases the quality of life, mainly affecting sleep, figure, and patient's mood, which stresses the importance of finding a treatment.[4] Randomized control trials (CRT) argued that when all topical steroid, topical anesthetics and antihistamine fails, immunomodulatory agents, such as cyclosporine and methotrexate, can be beneficial. Few reports claim that gabapentin and neurokinin-1 receptor antagonists are successful in treating PN, along with antiepileptics and antidepressants.[7] One article studied the effect of Dupilumab, a monoclonal antibody in a single case of PN, and showed its efficacy.[8] No real importance is given in the literature to treating psychogenic itch especially seen in elderlies however this case report shows that behavioral approach should always be offered.

CASE PRESENTATION

A 74-year-old female patient, with multiple comorbidities, presented to the Emergency Department with confusion and

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fever, found to have encephalitis. On an extensive physical exam, patient was found to have a diffuse rash (**Figure 1-2-3**). Rash involved mainly both upper and lower limbs, back, and mildly the abdomen; no lesions were foundon face or genitals.

After a thorough history taking from the patient and the family,they revealed that this rash has been present for at least 7 years, which is itchy in nature, fluctuates in intensity, but has never completely resolved. The rash was never related to any triggers, whether food, allergens or a season. Patient saw dermatologistson multiple occasionsin outpatient clinic, and wasprescribed emollients, non-sedating and sedating antihistamine as needed, but skin lesions did not improve, and patient lost follow up to the clinics.

On further questioning, she admitsapplying topical steroids and topical emollients to the rash;which also was not helpful, the lesions and pruritis persisted.

4 months prior to this hospitalization, she seeked the help of a primary care physician who introduced a treatment with methotrexate, which the patient took for 3 months, and stopped after suffering from side effects and due to persistence of the dermatological symptoms. During all these years, despite different interventions, patient suffered continuous itch, especially in her upper body accompanied by non-resolving , fluctuating, nodular rash.

As part of her workup,the patient had a mildly elevated white blood count, explained by her current infection, with normal chemistries, normal liver enzymes and lipid panel, normal TSH, and an anemia workup in favor of iron deficiency anemia (IDA). Her past medical history is significant for diabetes mellitus type II, hypertension, asthma, and coronary artery disease (CAD),status post 3 stents placement. There was nothing significant on review of systems; her home medications aremetformin, gliclazide, long-acting insulin, atorvastatin, nebivolol, aspirin, amlodipine, moxonidine, fluticasone inhaler and tiotropium bromide inhaler. None of them was associated with the eruption and fluctuating nature of the rash. Therefore, no agent related to the current illness, chronic ones or their treatments was correlated to the skin eruptions.

Patient was hence diagnosed with Prurigo Nodularis, secondary to psychogenic chronic pruritis. Therefore, she was prescribed a short course of topical steroids, with antihistamine at bedtime and escitalopram. Simple behavioral changes such as keeping a moist skin and short nails were recommended as well. Patient was discharged from medical ward after resolution of her encephalitis, and a follow up at 8 weeks showed stabilization of the rash, resolution of pruritis and a better quality of life as reported by her, with better quality of sleep.

DISCUSSION

In this case, the patientwith a nodular scaly rash, was diagnosed withPruritis Nodularis. Several differential diagnoses were raised including scabies and arthropod bites which were ruled out byhistory taking and interrogatory with the family. Atopic dermatitis or underlying inflammatory conditions, were to be ruled out by biopsy. Autoimmune Bullous Pemphigoid was ruled out via absence of blisters on physical exam.Hypertrophic Lichen Planus, Multiple Keratoacanthomas or Lichen Amyloidosis were to be ruled out via dermoscopy and histopathology.Also,brachioradical pruritis was on the differential diagnosis, however this the rash presents locally, rather than diffusely, as in this patient. Finally, skin-picking disorder, can be assessed for by a psychiatric evaluation.[4]

As for the work up of the underlying causes for pruritis, none of the patients' medicationsare associated with this itch. The metabolic panel and blood test did not indicate any liver, renal or infectious illnesses that could explain her condition. Workup was only significant for an acute encephalitis causing her current admission;however,this patient has been suffering from the rash for the last 7 years; IDA is not one of the etiologies mentioned in the literature earlier. Therefore, the most likely diagnosis of PN is secondary to psychogenic itch.

Finally, it is worth noting that the patient had a management very similar to the one discussed in the literature; she used topical agents, steroids, antihistamines and even disease modifying anti-rheumatic drugs (DMARDs) with no improvement, and lastly, she was put on Selective Serotonin Reuptake Inhibitors (SSRI) as a final resort, which seemed to be the one that stabilized and helped best her situation.

Starting SSRI or any other antidepressant in an elderly patient, require the physician to engage in close follow up, frequent visits to monitor clinical and biological side effects.

Figure 1. Nodular lesions on back with scars of old lesions. Note the "butterfly sign" on the upper back where patient can barely reach to scratch.

Figure 2. Small nodules on the thigh.

Figure 3. Scaly brown plaques on the lower limb.

Limitations

During the management of patient, there was multiple differential diagnoses and underlying etiologies to be ruled out. However, patient did not receive an extensive workup to rule out malignancy, mainly lymphomas, as previously discussed. Also, the patient refused skin biopsy anddermoscopy. The itch causing this chronic rash could be of psychogenic origin, dermatillomania, or skin pricking disorder, which falls in the category of obsessive-compulsivedisease.

CONCLUSION

This is a rare case of PN in an elderly patient, thought to be secondary to psychogenic itch. After several failed trials of oral anti histamine and topical soothing creams and steroids, patient was started on SSRI and improvement was noted. PN is a skin condition that can affect patients sleep, mood and quality of life, hence further studies and RCTs should aim at identifying a safe treatment.

CONFLICT OF INTEREST

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

ABBREVIATIONS

PN: Prurigo Nodularis
RCT: Randomized Control trials
SSRI: Selective Serotonin Reuptake Inhibitor
IDA: Iron Deficiency Anemia

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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